Cisco Systems
Cisco UCS C480 M5 (Intel Xeon Platinum 8180, 2.50GHz)  

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>Not Run</th>
</tr>
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<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>150</td>
</tr>
</tbody>
</table>

CPU2006 license: 9019  
Test sponsor: Cisco Systems  
Tested by: Cisco Systems  

**Hardware**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Platinum 8180</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.80 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2500</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>112 cores, 4 chips, 28 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>2.4 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
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</table>

**Software**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
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<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 SP2 (x86_64) 4.4.21-69-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 18.0.0.0.082 of Intel C/C++ Beta Compiler for Linux; Fortran: Version 18.0.0.082 of Intel Fortran Beta Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
</tbody>
</table>

**Performance Results**

- 416.gamess 48.9  
- 433.milc 79.8  
- 434.zeusmp 186  
- 435.gromacs 47.9  
- 436.cactusADM 1500  
- 437.leslie3d 463  
- 444.namd 36.5  
- 447.dealII 75.2  
- 450.soplex 52.3  
- 453.povray 72.0  
- 454.calculix 73.1  
- 459.GemsFDTD 172  
- 465.tonto 51.2  
- 470.lbm 145  
- 481.wrf 145  
- 482.sphinx3 70.2  

SPECfp_base2006 = 150

Test date: Jun-2017  
Hardware Availability: Aug-2017  
Software Availability: Apr-2017
 SPEC CFP2006 Result

Cisco Systems
Cisco UCS C480 M5 (Intel Xeon Platinum 8180, 2.50GHz)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>CPU2006 license</th>
<th>Test date:</th>
<th>Hardware Availability:</th>
<th>Tested by:</th>
<th>Software Availability:</th>
</tr>
</thead>
</table>

| CPU2006 license: | 9019
| Test sponsor: | Cisco Systems
| Tested by: | Cisco Systems
| L3 Cache: | 38.5 MB I+D on chip per chip
| Other Cache: | None
| Memory: | 768 GB (48 x 16 GB 2Rx4 PC4-2666V-R)
| Disk Subsystem: | 1 x 800 GB SSD SAS
| Other Hardware: | None
| Base Pointers: | 64-bit
| Peak Pointers: | 32/64-bit
| Other Software: | None

Results Table

<table>
<thead>
<tr>
<th></th>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>410.bwaves</td>
<td>9.20</td>
<td>1480</td>
<td>9.21</td>
<td>1480</td>
<td>9.20</td>
<td>1480</td>
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<tr>
<td>Peak</td>
<td>416.gamess</td>
<td>400</td>
<td>48.9</td>
<td>399</td>
<td>49.0</td>
<td>400</td>
<td>48.9</td>
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<tr>
<td>Base</td>
<td>433.milc</td>
<td>115</td>
<td>79.6</td>
<td>114</td>
<td>80.5</td>
<td>115</td>
<td>79.8</td>
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<tr>
<td>Peak</td>
<td>434.zeusmp</td>
<td>48.9</td>
<td>186</td>
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<td>46.9</td>
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<tr>
<td>Base</td>
<td>435.gromacs</td>
<td>149</td>
<td>47.9</td>
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<td>48.0</td>
<td>149</td>
<td>47.9</td>
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<td>Peak</td>
<td>436.cactusADM</td>
<td>7.98</td>
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<tr>
<td>Base</td>
<td>437.leslie3d</td>
<td>20.3</td>
<td>464</td>
<td>20.3</td>
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<td>20.5</td>
<td>458</td>
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<tr>
<td>Peak</td>
<td>444.namd</td>
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<td>36.5</td>
<td>221</td>
<td>36.4</td>
<td>220</td>
<td>36.5</td>
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<tr>
<td>Base</td>
<td>447.dealII</td>
<td>152</td>
<td>75.2</td>
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<td>75.1</td>
<td>152</td>
<td>75.4</td>
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<tr>
<td>Peak</td>
<td>450.soplex</td>
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<td>52.2</td>
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<td>52.3</td>
<td>159</td>
<td>52.4</td>
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<tr>
<td>Base</td>
<td>453.povray</td>
<td>73.9</td>
<td>72.0</td>
<td>73.9</td>
<td>72.0</td>
<td>74.5</td>
<td>71.4</td>
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<tr>
<td>Peak</td>
<td>454.calculix</td>
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<td>73.0</td>
<td>113</td>
<td>73.1</td>
<td>113</td>
<td>73.2</td>
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<td></td>
</tr>
<tr>
<td>Base</td>
<td>459.GemsFDTD</td>
<td>62.7</td>
<td>169</td>
<td>60.1</td>
<td>176</td>
<td>61.8</td>
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<tr>
<td>Peak</td>
<td>465.tonto</td>
<td>191</td>
<td>51.6</td>
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<td>49.0</td>
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<tr>
<td>Base</td>
<td>470.summary</td>
<td>3.37</td>
<td>4080</td>
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<tr>
<td>Peak</td>
<td>481.wrf</td>
<td>76.9</td>
<td>145</td>
<td>76.9</td>
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<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base</td>
<td>482.sphinx3</td>
<td>277</td>
<td>70.3</td>
<td>278</td>
<td>70.2</td>
<td>279</td>
<td>69.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS Settings:
Intel HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS
SNC set to Disabled
IMC Interleaving set to Auto
Patrol Scrub set to Disabled
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-nvug Mon Jun 26 08:08:50 2017

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Cisco Systems
Cisco UCS C480 M5 (Intel Xeon Platinum 8180, 2.50GHz)  SPECfp2006 = Not Run
SPECfp_base2006 = 150

CPU2006 license: 9019  Test date:  Jun-2017
Test sponsor:  Cisco Systems  Hardware Availability:  Aug-2017
Tested by:  Cisco Systems  Software Availability:  Apr-2017

Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz
  4 "physical id"s (chips)
  112 "processors"
  cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 28
  siblings : 28
  physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
  25 26 27 28 29 30
  physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
  25 26 27 28 29 30
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
  25 26 27 28 29 30
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24
  25 26 27 28 29 30
  cache size : 39424 KB

From /proc/meminfo
MemTotal:       791191572 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 2
  # This file is deprecated and will be removed in a future service pack or release.
  # Please check /etc/os-release for details about this release.
  os-release:
    NAME="SLES"
    VERSION="12-SP2"
    VERSION_ID="12.2"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
  (9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 25 22:33

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Cisco Systems
Cisco UCS C480 M5 (Intel Xeon Platinum 8180, 2.50GHz)

SPECfp2006 = Not Run
SPECfp_base2006 = 150

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Platform Notes (Continued)
SPEC is set to: /opt/cpu2006-1.2
Filesystem  Type  Size  Used  Avail  Use% Mounted on
/dev/sda2    xfs   644G   60G   584G  10% /
Additional information from dmidecode:
Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. C480M5.3.1.0.245.0514171056 05/14/2017
Memory:
48x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/lib/ia32:/opt/cpu2006-1.2/lib/intel64:/opt/cpu2006-1.2/sh10.2"
OMP_NUM_THREADS = "112"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default.

Base Compiler Invocation
C benchmarks:
  icc -m64
C++ benchmarks:
  icpc -m64
Fortran benchmarks:
  ifort -m64
Benchmarks using both Fortran and C:
  icc -m64 ifort -m64

Base Portability Flags
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64

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| SPECfp2006 = | Not Run |
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| Test date: | Jun-2017 |
| Hardware Availability: | Aug-2017 |
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### Base Portability Flags (Continued)

- 434.zeusmp: -DSPEC_CPU_LP64
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64
- 447.dealII: -DSPEC_CPU_LP64
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64 -nofor_main
- 454.calculix: -DSPEC_CPU_LP64 -nofor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64
- 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
- 482.sphinx3: -DSPEC_CPU_LP64

### Base Optimization Flags

- C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
- C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
- Fortran benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
- Benchmarks using both Fortran and C:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

The flags files that were used to format this result can be browsed at:
- [Intel-ic17.0-official-linux64-revF.html](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html)
- [Cisco-Platform-Settings-V1.2-revG.html](http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revG.html)

You can also download the XML flags sources by saving the following links:
- [Intel-ic17.0-official-linux64-revF.xml](http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml)
- [Cisco-Platform-Settings-V1.2-revG.xml](http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revG.xml)
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<th>Test date: Jun-2017</th>
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<td>Cisco Systems</td>
<td>Test sponsor: Cisco Systems</td>
<td>Hardware Availability: Aug-2017</td>
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<td>Tested by: Cisco Systems</td>
<td>Software Availability: Apr-2017</td>
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<td>Cisco UCS C480 M5 (Intel Xeon Platinum 8180, 2.50GHz)</td>
<td>SPECfp_base2006 = 150</td>
<td></td>
</tr>
</tbody>
</table>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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